

How to Cite:

Belguerbouz, M., & Benguetib, A. (2025). Petroleum derivatives and their role in the achieving of Algerian economic diversification. *International Journal of Economic Perspectives*, 19(5), 1912–1925. Retrieved from <https://ijeponline.org/index.php/journal/article/view/1017>

Petroleum derivatives and their role in the achieving of Algerian economic diversification

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Abstract--This research aims to highlight the role and importance of petroleum derivatives in achieving economic diversification in order to get out of economic dependency and avoid the resulting economic problems. Through our study and the examination of the role of petroleum derivatives in economic diversification, we concluded that these derivatives play a significant role in the diversification process, that Algeria neglects this aspect, and that its economic policy is based on oil revenues.

Keywords--Petroleum derivatives, petrochemical industry, economic diversification, Algerian economy.

1. Introduction

The oil plays a major and important role in the economic development process in many countries since the early seventies until today, where it is an important and strategic material in various industries in the world. However, relying on it in a large degree leads these countries to fall in economic crises, and instead of this resource being a blessing; it becomes a curse. Accordingly, these countries must work to adopt a various economic policies that aim to achieve a kind of economic diversification to get out of dependency.

Algeria is among the countries that depend on oil by 99%, as Algeria's revenues from oil exports amounted to an estimated 34 billion dollars by the end of September 2024, while exports outside of hydrocarbons was estimated at 7 billion

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Submitted: 27 March 2025, Revised: 18 April 2025, Accepted: 09 May 2025

dollars. Accordingly, Algeria is seeking today to adopt various economic policies and reach the threshold of 29 billion dollars by 2030, which aims to get out of the dependency and establish of the economic diversification.

1.1 Research problem

Based on what was addressed in the introduction, we pose the following problem: How can petroleum derivatives contribute to economic diversification in Algeria and how it can contribute in the exiting from oil dependency?

Based on this Research problem, we pose the following sub-questions:

What is the petroleum derivatives and what are their types?

What is the economic diversification?

What is the role of petroleum derivatives in the consolidating of economic diversification?

How can petroleum derivatives contribute in the economic diversification in Algeria?

1.2. Research hypotheses:

The research hypothesis was formulated in light of the problem raised as follows:

- The amount of oil present in Algeria and extracted daily allows it to achieve economic diversification based on oil derivatives and getting out of the cycle of crude oil revenues dependence.

1.3. Research Importance:

Given the importance of economic diversification in building the economies of some oil countries that depend on natural resources, we try through this research to show the importance of petroleum derivatives that enter into the manufacture and production of many products, whether final or semi-manufactured.

1.4. Research objectives:

This study aims to highlight and know the extent of the contribution of petroleum derivatives to achieving economic diversification and exiting economic dependence for oil countries that depend on oil by 99% in economy building.

2. Petroleum industry:

The petroleum industry process goes through two main stages, each of which goes through several stages, represented by the Source stage and the downstream stage.

A- Source stage: In this stage, the focus is on knowing the location of the oil and the quantities present in it, and this is based on conducting theoretical, applied and cognitive studies, as this stage revolves around several stages, which are as follows:

- **The research and discovery stage:** In this stage, work is done to discover oil, which is often associated with the types of rocks that make up the earth, as it is often found in sedimentary rocks. Among the most important methods that can

be followed to discover and search for oil are (geological survey, geophysical survey, seismic survey and magnetic survey).

- **The drilling and exploration stage:** After discovering the oil and knowing its location, the drilling process is carried out to confirm the presence of oil or not. (Daoudi, Fatima Zahra, and Slimani Razika, 2016).

- **Oil extraction and production stage:** After confirming the presence of oil in the specified location, it is extracted to become suitable for transportation, export and manufacturing in nearby and distant locations inside and outside the country.

B- The downstream stage: In this stage, oil is exploited after its extraction through several different and varied activities, where the focus is on the economic and industrial aspect, unlike the upstream stage, where the focus is on the theoretical and cognitive aspect, as this stage also goes through several stages, which are:

- **Oil transport stage:** During this stage, work is done to transport oil as a raw material to the areas where it is either exported as a raw material or converted, manufactured, refined and extracted into a group of products that are economically beneficial.

- **The refining or oil refining stage:** During this stage, oil is converted from a raw material into a manufactured or semi-manufactured material in several forms of products that are used to meet the daily needs of individuals or factories as a source of energy through refineries.

- **Marketing and distribution stage:** After the refining or filtering process comes the marketing process, whether locally for use as a final or semi-final material to obtain other products, or export it as a raw material in order to obtain revenues called oil revenues. (Daoudi, **Fatima Zahra, and Slimani Razika, 2016, p. 08**).

- **Petrochemical manufacturing stage:** During this stage, groups of products are obtained, represented by agricultural fertilizers that are used in the agricultural sector, thus encouraging production in this field and exiting the cycle of oil dependency. In addition to other products including (detergents, plastic materials, synthetic fabrics, etc.), as this stage includes a group of economic and industrial activities that contribute to achieving economic diversity.

3. Petroleum derivatives: The process of increasing petroleum refining continued due to the increased demand from consumers for many products that can be extracted from petroleum, which called petroleum derivatives, including:

3.1. Gasoline: A clear liquid used as a fuel for cars, due to the high energy resulting from its combustion, and thanks to its ability to mix quickly with oxygen. It is also used as fuel for aircraft, compressors, and electric generators.

3.2. Kerosene: A clear or bluish-yellow liquid, it is the main product of the refining process and was known in the Arab countries as kerosene oil, and is a basic component of jet engine fuel. This is due to its properties, such as ignition quality, stable combustion inside the engine, low volatility, and suitable viscosity and density. Among the types of this product is aircraft kerosene, which is divided into several types based on its freezing degree, including (all types of jet kerosene, lighting kerosene, engine and machinery kerosene, heating kerosene).

3.3. Fuel oil: This type known as the heavy petroleum product and is used for heating inside homes, as fuel for cars, trucks, ships and almost all means of transportation. It is also used as an electricity generator in electrical stations and other generators.

3.4. Diesel: Known as solar, it is a petroleum derivative. which is used to operate gas turbines and external combustion engines, in addition to its use as fuel for car, bus and truck engines, and it is known to be widely consumed.

3.5. Petrochemicals: These are chemical products that can be extracted from crude oil and natural gas and can be used by humans in their daily lives, including (shampoo, deodorant, lipstick, sunscreen, baby bottle nipples, diapers, toothpaste, dentures, artificial hearts, antihistamines, aspirin, disinfectants, contact lenses, safety glass, pictures, football, car parts, phones).

3.6. Liquefied petroleum gas: This gas is composed of hydrocarbons and its types include:

-**Propane:** It is colorless and found in cylinders and tanks; it can be extracted alone or mixed with butane as fuel for internal combustion engines; in addition to its use in homes.

- **Butane:** It is also colorless and odorless and is added to car fuel alongside gasoline in order to increase its volatility.

3.7. Lubricating oils: This type of oil is used to reduce friction between the surfaces of bodies in contact with each other, and also prevents corrosion and rust in engines. One of its advantages is that it works to enhance the transfer of energy and heat.

3.8. Paraffin wax: It is also extracted from crude oil at normal temperature in order to use it in many fields, which expands its scope of use.

3.9. Asphalt: It is known to be black in color and highly viscous, as it is used in the process of painting houses and roofs to prevent water leakage.

4. The concept of economic diversification:

4.1. Definition of economic diversification

Economic diversification has several definitions. Some link it to the income sources or the commodity exports structure, while the common definition is diversification in the exports volume. However, this definition is incomplete, and therefore economic diversification is not related to diversification of exports, but rather to import substitution. Therefore, economic diversification means diversification in the production process and reducing dependence on a single resource, as is the case with oil-producing countries, and moving from the single sector dependence policy and encouraging other sectors such industry and agriculture.

Therefore, economic diversification means working to increase production in various sectors and working to export a large group of goods and services. The

main goal of oil countries with regard to the economic diversification process is to get out of oil dependency and export oil as a raw material and move towards encouraging non-oil exports and opening the way for the private sector to contribute to the production process.

4.2. Economic diversification measuring Indicators:

There is a set of indicators through which economic diversification can be measured. Among the most important of these indicators is the **Herfindahl–Hirschman** index, which is the most common, while the various indicators give us quantitative estimates of the phenomenon of economic diversification that are close, as the closer this index is to zero, the more it indicates that there is diversity in the economy. If this index approaches one, this indicates the opposite; this index can be calculated as follows:

$$H = \frac{\sqrt{\sum_{i=1}^N \left(\frac{x_i}{X}\right)^2} - \sqrt{\frac{1}{N}}}{1 - \sqrt{\frac{1}{N}}}$$

Where:

N: Output components Number (sectors number).

X: GDP.

Xi: GDP in the sector.

Among the indicators that can be relied upon to calculate economic diversification are the following:

- Structural change degree.
- The GDP instability degree and its relationship to oil price instability.
- The oil revenues development as a total state revenues percentage.
- Non-oil exports development and composition.
- Sectorial distribution of the workforce.
- The contribution percentage of public and private sectors to the gross domestic product. **(Mohamed Karim Qrouf, 2016, p. 640).**

5. Economic diversification in oil countries

Most Arab countries depend on their economies on one resource, especially those that have oil; this makes them vulnerable to fluctuations and effects on the local economy. On this basis, the theory of the resource curse applies to these countries, the content of which revolves around three points:

5.1. The Dutch Disease: It was named the Dutch disease due to the discovery of gas in the Netherlands during the sixties and the focus of all eyes on this sector due to the high prices of gas on the international market and the increases in state revenues during that period. However, after the boom, gas prices experienced a sudden decline, which led to the Netherlands falling into an economic crisis due to its neglect of other sectors and its focus on the

hydrocarbons sector (gas), knowing that this phenomenon applies to many oil or oil-exporting countries.

5.2. Internal conflicts: Many countries are exposed to internal conflicts caused by the presence of natural resources and the low standard of living of their people, which forced them to form fronts in order to exploit these resources for their own benefit.

5.3. Weak institutions: All countries that have natural resources and a weak economic growth level are caused by institutional weakness and the inability to manage these resources and use them in the best way. Accordingly, oil countries always seek to diversify their economy, whether by encouraging the agricultural, industrial and tourism sectors, or by getting out of the oil dependence cycle to avoid many problems, especially the points that we have mentioned according to the resource curse theory. **(Alan Gelb, 2010, p. 09)**

6. Petroleum derivatives and their impact on economic diversification:

During the 1970s, Arab countries began exploiting their hydrocarbon reserves. The petrochemical industry, even though it is derived from petroleum, remains a cornerstone of economic diversification policies. This is largely due to the fact that the petrochemical industry provides financial surpluses for oil-rich countries, especially after 1973, when oil prices soared.

The Gulf countries have known success in the petrochemical industry field due to the made efforts in this field through working to establish an advanced infrastructure such as building ports and roads...etc., in addition to working for establishing a partnership with several companies in this aspect that were pioneers in this field. Accordingly, the petrochemical industry or petroleum derivatives has played a major role in the economic diversification process that needed by oil-producing countries, especially in the current circumstances of this material experiencing a sharp decline in price levels, which has led to financial crises for the exporting countries. Accordingly, work must be done to encourage other sectors and thus achieve what is called economic diversification, even if it is based on oil. The following figure shows us what can be produced from one barrel of oil. **(Abdelwahab Al-Saadoun, 2019, p. 30).**

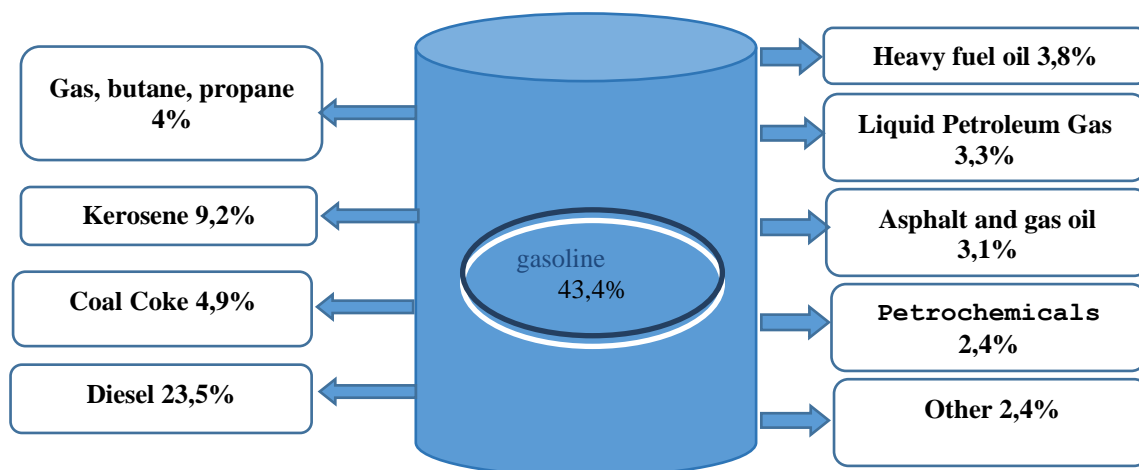


Figure: Production of one barrel of crude oil

Source: Qusay J. Altameme, AL Jazeera Petroleum Products Trading CO. LLC, P08

From the figure, we notice that a group of materials can be extracted, which are mostly imports imported by the oil-producing countries, especially energy materials, in addition also petrochemical products. Therefore, these oil countries must work to build a special infrastructure for this aspect in order to get out of economic dependence on the hydrocarbon sector and avoid many problems at the economic level, in addition to encouraging other industries. Accordingly, establishing a policy of economic diversification does not require relying on other sources, but rather it is possible to start from the resource that is the problem cause, that is, working to transform these resources from raw materials to other materials of utmost importance, some of which are petrochemicals and some of which are energy.

7. The petrochemical industry in Algeria:

The petrochemical industry in Algeria falls under No. 09 of the Activity Sector Code, which includes eight sections, as follows:

- Javel water industry;
- Fertilizers and pesticides;
- Resins, polyesters and plastics industry;
- Other intermediate plastic goods industry;
- Basic organic chemical industry;
- Paint and solvents industry;
- Pharmaceutical industry
- Other chemical industry. (**Karimou Draji, Abdel Nasser Hosseini, 2018, p. 11**)

As for the petrochemical industrial units in Algeria, there are several production units in Algeria in the petrochemical industry field, in addition to the Bejaia complex, which was established in 2018.

7.1. Skikda Petrochemical Complex: It is considered one of the largest and most massive petrochemical complexes in Algeria and is located near the gas liquefaction complex (GL1K). Studies for its construction began in the late sixties and the Establishment contract was signed in 1971 with the Japanese company TEC and the Italian company SNAM PROGHI. It entered into operation in 1972 and actual production began in 1977. It consists of several units as follows:

- Ethylene unit;
- Polyethylene unit;
- Soda chloride unit;
- Vinyl chloride unit;
- Polyamide unit. **(Fateh Said, 2011, p. 06)**

7.2. Arzew Complex: This complex includes two complexes and is located in the Arzew industrial zone. The first complex is for the methanol production and its derivatives, which contains two main units. The production of methanol in 2008 reached approximately 71.9 thousand tons, and the resins production capacity reached 23 thousand tons per year. As for the second complex, it is for the phosphate manufacture and nitrogen fertilizers, which entered production in 1970 with a production capacity of 800 thousand tons per year.

7.3. Grease, detergents and pharmaceutical products manufacturing company: These materials are produced in both Skikda and Arzew complexes, in addition to Algiers and Ain Temouchent.

7.4. Plastic manufacturing establishments: Plastic materials are manufactured in Algiers, Setif, Skikda, and Saida. including boxes, toys, furniture, pipes, bags, glass bottles, and electrical wire packaging.

7.5. Industrial gases production unit: represented by both helium and nitrogen, which are produced in the Skikda and Arzew complexes, where the production capacity in Arzew 600 million cubic feet per year of helium gas and 33 thousand tons per year of nitrogen gas, a large part of which is directed to production and export. **(Karimou Draji, Abdel Nasser Hosseini, 2018, p. 11)**

8. Economic diversification in Algeria:

Algeria's dependence on the hydrocarbon sector to build its economy has made it vulnerable to several economic problems, that because hydrocarbon prices are subject to decline in the international market. Since 2014, this resource has seen a decline in price, which has had an impact on the following:

The trade balance recorded a deficit of \$20 billion in 2016, while the balance of payments also recorded a deficit of \$26 billion.

- Foreign exchange reserves decreased from \$193 billion to \$105 billion in July 2017.
- A decline in oil tax revenues by more than 50%, which prompted Algeria to consume all the savings in the public treasury.
- The approved investment declined in the last three years from 3,500 billion dinars in 2015 to 1,900 billion dinars in 2016 and 1,400 billion dinars in 2017. **(Loucif Amar, Al-Abed Lazhar, 2019, p. 13)**

Based on these achieved indicators during this period, Algeria worked to adopt a policy of economic diversification in order to solve these problems and get out of the hydrocarbon sector dependence cycle by the following:

8.1. Structural change: Economic diversification in Algeria aims to work towards achieving an annual growth rate outside the hydrocarbon sector of 6.5% during the 2020-2030 period. In addition, to work towards doubling the gross domestic product by 2.3, in addition to doubling the industrial sector contribution to the gross domestic product to reach 10% after it was estimated at 5.3%, and not neglecting the agricultural sector in order to modernize it, to achieve the food security and diversify exports. As for investment, Algeria must focus on investment in the field that aims to raise production outside the hydrocarbon sector.

8.2. Non-traditional domestic financing: Algeria has adopted a policy of non-traditional financing to cover the expenditure component of the budget and not to resort to external debt due to its consequences on the Algerian economy. Algeria has printed 40 billion dollars. However, although this policy must be implemented in the short term, Algeria has fallen into several economic problems through its adoption, most notably inflation, the decline in the value of the national currency, the decline in purchasing power for citizens, and the high cost of living, which has led to a decline in the standard of living. This has also caused risks that affect the financial and economic independence in Algeria.

8.3. Exports outside the hydrocarbon sector: The aim is to adopt an economic policy based on a balanced growth model. i.e. working to stimulate other sectors by relying on the hydrocarbon sector, which allows them to achieve an added value in each of the following sectors:

10% in the tourism sector.

25% in the agriculture sector.

15% in the industrial sector.

While this value can increase if Algeria pays attention to the petroleum derivatives aspect, as it linked to the industrial sector. **(Loucif Amar, Al-Abed Lazhar, 2019, p. 15)**

8.4. Renewable energy: Algeria has great potential in the field of renewable energy, represented by solar, wind, and water energy. However, the technological aspect that drives this sector is considered one of the weak areas in Algeria, although it does not require complex technology, but it requires a huge financial side, such as the Desertec project with Germany, the aim of which is to exploit the solar energy present in the Algerian desert.

9. Petroleum derivatives and economic diversification in Algeria:

Algeria has previously occupied a prominent position in the Middle East and North Africa region, and this is all due to the construction of an ammonia complex in Arzew in 1967, and a petrochemical complex in Skikda in 1978. Due to the cessation of ethylene production, this led to the collapse of the petrochemical industry in Algeria, and consequently the export of polyethylene, polypropylene and polyacetylene stopped, as Algeria's share did not exceed 0.5%

of the total Arab production capacity during the year 2018, knowing that Saudi Arabia owns 66.5% of the total production capacity of ethylene.

Algeria has great potential in the field of ethylene production due to its abundance of oil, which is the main source of this product. In addition, it can be among the countries that occupy advanced ranks if it relies on oil to encourage the manufacture of plastic materials. The Algerian market also knows a great demand for pharmaceutical products due to the policy adopted by the state in the field of social security. Accordingly, work must be done to develop this field, as local production can cover 50% of local demand in the medium term. Algeria can also open up to foreign markets through the process of exporting these products, especially Africa and the Middle East. **(Dunya Khanshoul, 2020, p. 216)**

About 3% of petroleum products are used in the pharmaceutical industry, as 99% of pharmaceutical materials are obtained from oil and gas. In addition, they can be used to obtain other products. Petrochemical materials are also used in the manufacture of a group of medicines, including:

Phenol and cumene are used to form an important substance in the manufacture of penicillin, one of the most important antibiotics in the manufacture of aspirin. Resins are used in the manufacture of medicines for AIDS, cancer and arthritis. They also contribute to reducing the costs of the manufacturing process for these medicines, on the one hand, and are also used in purifying medicines from impurities.

- Petroleum products are used in the production of many creams and medical preparations to treat psoriasis and dandruff, etc. **(Kifayat Al-Abadi, 2018)**

During 2017, Sonatrach was intending to carry out development projects in the petrochemical industry by establishing four petrochemical complexes, with a value of \$6 billion, through the establishment of new refineries in the states of Tiaret, Hassi Messaoud, and Skikda, with a production capacity exceeding 10 million tons per year. Sonatrach invited international engineering companies to compete to invest in the construction of these complexes, with a total value of \$6 billion. The winning companies will also undertake the adoption of this project to establish refineries in Tiaret, Hassi Messaoud, with a production capacity of 5 million tons, in addition to the state of Skikda and a complex for cracking fuel oil, and another plant for processing naphtha, while Algeria was producing 30 million tons of refined petroleum products. **(Four Petrochemical Complexes to Boost Energy Production in Algeria, 2017)**

Algeria has also invested \$4.2 billion to rehabilitate refineries in Algiers, Skikda and Arzew, so that their production capacity reaches 26 million tons per year, compared to a production of 22 million tons per year in 2016. According to the Arab Organization for Industry and Mining, refining one barrel of oil has an added value estimated at \$3, while this added value amounts to \$36 if it is converted into ethylene, which is mainly used as an intermediate compound in the production of other chemicals, especially plastics. Ethylene can be directly polymerized to produce polyethylene, from which plastic is produced.

Propylene is used as a fuel in liquefied petroleum gas, and is mixed with small amounts of propylene, butane, butylene, and ethanethiol to give the propane a smell. It is used as a fuel in cooking and grilling, portable materials, cars, buses,

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forklifts, and taxis, and is also used in camps, which leads to creating an added value estimated at: \$ 2,600 billion.

The following table shows the quantities of oil derivatives consumed in Algeria during the period from 2015 to 2019 according to the OPEC report for the year 2022.

Table No. (01): consumed quantities of petroleum derivatives in Algeria during period (2018-2023)

Unit:

thousand barrels per day

Years	LPG	Gasoline	Kerosene	Jet Fuel	Gas oil and diesel	Fuel oil	Other petroleum derivatives	the total
2019	76.6	91.2	0.3	10.1	207.9	0.2	18.1	404.5
2020	77.2	78.1	0.3	4.3	182.3	0.2	15.5	358.0
2021	85.4	79.7	0.3	5.0	192.2	0.2	15.6	378.4
2022	92.6	77.9	0.3	5.3	200.7	0.2	12.9	390.0
2023	98.1	78.3	0.3	5.5	206.6	0.2	15.1	404.4

Source: Fouad Ali Abdel Rahman Daoud, et al., Annual Report 2020, Organization of Arab Petroleum Exporting Countries (OPEC), Kuwait, 2020, pp. 76-88.

We note from the table; the daily consumption of petroleum derivatives in Algeria was estimated at 404,400 barrels per day during the year 2023. which suggests that Algeria must pay attention to the petroleum derivatives aspect in order to cover local demand on the one hand, and reduce the import bill on the other hand. knowing that the amount of oil produced daily during the year 2023 is estimated at 907,500 barrels per day, meaning that the amount of 503,100 barrels per day can be directed to export and open up to the foreign market, also to raise growth rates. In addition to getting out of economic dependence and working to create what is called economic diversification. The following table shows the produced petroleum derivatives quantities in Algeria during the year 2023.

Table No. (02): produced petroleum derivatives in Algeria during the year 2023

Petroleum Derivatives	Production per barrel of oil	Daily oil production	Total production of petroleum derivatives
Solar	38 liters	907,500 daily	34485000 liters
Distillation waste	4.7 liters	907,500 daily	4265250 liters
Jet Fuel	14.80 liters	907,500 daily	13431000 liters
Gasoline	73.25 liters	907,500 daily	66474375 liters
liquefied Gas	6.51 liters	907,500 daily	5907825 liters
Heavy Fuel Oil	6.35 liters	907,500 daily	5762625 liters
Engine Oil	1/4 liter	907,500 daily	226875 liters
Wax	127 candles	907,500 daily	115252500 candles
Wax Pen	27 pens	907,500 daily	24502500 pens
Asphalt	4.54 liters	907,500 daily	4120050 liters

Petroleum Derivatives	Production per barrel of oil	Daily oil production	Total production of petroleum derivatives
Charcoal Briquettes	1.81 templates	907,500 daily	1642575 templates
Liquefied Gas.....	11 barrels	907,500 daily	9982500 barrels
Toothbrush	540 brushes	907,500 daily	490050000 brushes
Hair Comb	750 Combs	907,500 daily	680625000 Combs
Polyester Shirt	39 shirts	907,500 daily	35392500 shirts
Home Phone	11 Phones	907,500 daily	9982500 Phones

Source: Fouad Ali Abdel Rahman Daoud, et al., 2023 Annual Report, Organization of Arab Petroleum Exporting Countries (OPEC), Kuwait, 2023, pp. 22.

- What does a barrel of oil produce? <https://www.youtube.com/watch?v=INPOSnTH6tI>. Seen October 15, 2021.

- Economic information <https://www.youm7.com/story/2019/7/19/> Seen October 15, 2021 at 2:37 PM.

The table shows that Algeria can achieve a group of products related to oil. One barrel can produce 43.4% of gasoline. Which is enough to drive a medium-sized car for a distance of more than 450 km, diesel at 23.5%, used for heating and enough to drive a truck for a distance of 65 km, kerosene used in aircraft at a rate of 9.2% of the barrel's volume, and produces about one liter of motor oil. Heavy fuel oil constitutes 3.8% and is used in seawater desalination plants and electricity generation, and asphalt and tar oil constitute 3.1% and are used in paving roads and as an insulating material in construction. The percentage of coke that can be produced from a barrel of oil is about 4.9%. One barrel also produces an amount of propane gas sufficient to fill 12 domestic gas cylinders, and petrochemicals constitute 2.4% and include many of the products we use in our lives, such as disinfectants, shampoo, eyeglasses, CDs, car tires, and contact lenses. Artificial hearts and other products, knowing that the amount of oil produced daily is estimated at 907,500 barrels per day. This is what Algeria can achieve if it works to expand the scope of investment in the petrochemical industry, achieving what is called economic diversification and escaping economic dependency. However, this is based on working to invest in this field, building the infrastructure, exploiting this wealth, and reaching what many, oil-rich countries in the world have achieved.

10. Conclusion

Algeria has pursued several policies and strategies to achieve economic diversification, whether through investment in renewable energy or encouraging the agricultural and industrial sectors. This was done to break free from economic dependency and avoid all problems at all levels. However, it has not achieved the desired outcome. To this day, Algeria continues to suffer from dependency, and its economy is subject to the so-called natural resource curse theory, which states that oil, instead of being a blessing, has become a curse. Furthermore, Algeria has neglected an important aspect that plays a major role in consolidating economic diversification, namely investment in the petroleum derivatives industry. Where a single barrel of oil can produce several products, whether

energy products such as gasoline and diesel, or other materials such as pharmaceuticals, plastics, etc. Based on what has been discussed in this research, a set of suggestions and recommendations can be presented, as follows:

- Establishing the infrastructure related to the petroleum derivatives industry.
- Opening the door to investment in the oil petrochemical industry.

In order to achieve economic diversification, it is necessary to work on establishing industrial centers, supporting innovation, and transferring technology.

- Focus on investing in the following areas, through which economic diversification can also be achieved, as follows:
 - Chemical products and their branches, in addition to petroleum derivatives.
 - Agricultural products.
 - Iron and steel.
 - Cement.
 - Aluminum.
 - Textiles and Clothing.
 - Automotive.
 - Knowledge Sector.

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